

I claim:

1. A system for establishing a fluid communication between a floating body and a wellhead, the system comprising:
 - 5 a rigid, self-tensioning riser pipe providing fluid communication between the floating body and the wellhead, the riser pipe defining a major axis extending from the floating body to the wellhead; and
 - a series of pre-formed curves formed in the riser pipe so as to absorb and release energy in response to the heave and surge of the floating body by flexing
10 in a direction essentially parallel to the major axis.
2. The system of claim 1, wherein the series of pre-formed curves comprises a series of single-planar, pre-formed curves in the riser.
- 15 3. The system of claim 2, wherein the series of single-planar curves comprises arcs having a substantially constant radius of curvature.
4. The system of claim 2, wherein the series of single-planar curves comprises sinusoidal shaped curves.
20
5. The system of claim 1, wherein the series of pre-formed curves comprise a series of multi-planar, pre-formed curves in the riser.
6. The system of claim 5, wherein the series of multi-planar curves comprises form a
25 substantially helical curve.
7. The system of claim 6, wherein the helical curve has a curve spacing and a curve diameter, wherein the curve spacing is at least double the curve diameter.

Express Mail Certificate No.: EV 469213876 US
Attorney Docket No.: 713-21-CIP

8. The system of claim 6, wherein the riser has an axial length between the seafloor and the floating body, and wherein the helical curve has a curve spacing that increases along the axial length of the riser with the distance above the seafloor.